Sheet classification :

National Aeronautical Laboratory	**Documentation Sheet**	*Document Classification* Restricted
Title : Preliminary Design of Composite Rudder for MiG-21 Aircraft - Part II		*Document No.* PD ST 8621 *Date of issue:* Sept. 1986
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Division : Structures		*No. of copies:* 20
External participation : -		*NAL Project No.* ST 5101
Sponsor : -		*Sponsor's Project No.*
Approval : Head, Structures		
Remarks :		
Keywords : Composite rudder, Design		

Abstract : This report describes deflection analysis of metallic and composite rudder for MiG 21 aircraft. Preliminary estimate of static deflection of rudder is made by using laminated beam theory. For metallic rudder, spar, doubler and skin provide the bending stiffness in the spanwise direction, whereas for composite rudder the same is provided by spar, edge member and skin. Hence, analysis of beam of variable rigidity, subjected to variable load intensity is carried out. The effective widths of skin and leading edge are included in the cross section of the beam. Three different effective widths are used for metallic rudder. For composite rudder, lowest possible effective width is used and stiffness is compared to that of metallic rudder with highest possible effective width. Because of three connections: lower at fuselage, middle and top of the fin, the beam is treated as indeterminate structure. The beam analysis is based on influence coefficient method. It is to be noted that the bending stiffness of composite rudder is matched well to that of metallic rudder.